Relevancy success criteria

'I do this search I should get this set of results,'

- Case 1: Ozone search
  - Top 10 results we should get according to GSFC
  - Top 10 results we get from CMR on 02/13/15
- Case 2: Solar radiation search
  - Top 10 results we should get according to LaRC
  - Top 10 results we get from CMR on 02/13/15
- Case 3: Aerosol optical depth search
  - Top 10 results we should get according to LaRC
  - Top 10 results we get from CMR on 02/13/15
- Case 4: Backscatter search
  - Top 9 results we should get according to LaRC
  - Top 10 results we get from CMR on 02/13/15
- Case 5: Sea ice concentration search
  - Top 10 results we should get according to NSIDC
  - Top 10 results we get from CMR on 02/13/15
- Case 6: Glacier search
  - Top 10 results we should get according to NSIDC
  - Top 10 results we get from CMR on 02/13/15
- Case 7: Snow cover search
  - Top 10 results we should get according to NSIDC
  - Top 10 results we get from CMR on 02/13/15
- Case 8: Land use search
  - Top 10 results we should get according to LPDAAC
  - Top 10 results we get from CMR on 02/13/15
- Case 9: Forest fires search
  - Top 9 results we should get according to FIRMS (me)
  - Top 10 results we get from CMR on 02/13/15
- Case 10: Cloud search
  - Top 10 results we should get according to LaRC
  - Top 10 results we get from CMR on 03/16/15
- Case 11: Wind search
  - Top 8 results we should get according to LaRC
  - Top 10 results we get from CMR on 03/16/15

Methodology

1. Establish test cases. For example keyword search = ozone
   a. Ask providers for common keyword searches.
      i. GSFC
      ii. LPDAAC
      iii. NSIDC
      iv. LaRC
      v. FIRMS
2. Conduct searches through CMR
   a. bare search
   b. attempted provider specific search. The initial 'ozone' test by Chris Lynnes had a provider constraint at the free text level. Most of my responses have been very provider-centric
   c. Temporally constrained search if necessary. Ozone search was throwing up really old datasets for example.
3. Get 'top dataset' input from each provider and compare

Results

Case 1: Ozone search

Keyword search: 'ozone'

Source: Christopher Lynnes at GESDISC
Secondary Source: Mary Jane Saddington at LaRC

Top 10 results we should get according to GSFC

<table>
<thead>
<tr>
<th>Top dataset</th>
<th>Target</th>
<th>CMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMI/Aura Ozone (O3) DOAS Total Column Daily Level 3 Global 0.25deg Lat/Lon Grid</td>
<td>1</td>
<td>57</td>
</tr>
</tbody>
</table>
OMI/Aura TOMS-Like Ozone, Aerosol Index, Cloud Radiance Fraction Daily Level 3 Global 1.0x1.0 Deg | 2 | 63
OMI/Aura TOMS-Like Ozone and Radiative Cloud Fraction Daily Level 3 Global 0.25x0.25 Deg | 3 | 64
MERRA 3D IAU Tendency, Ozone, Time Average 3-Hourly (1.25x1.25L42) | 4 | 219
MERRA 3D IAU Tendency, Ozone, Monthly Mean (1.25x1.25L42) | 5 | 220
MERRA 3D IAU Tendency, Ozone, Diurnal (1.25x1.25L42) | 6 | 10
OMI/Aura Ozone (O3) DOAS Total Column Daily Level 2 Global 0.25 Deg Lat/Lon Grid | 7 | 55
OMI/Aura Ozone (O3) Total Column Daily Level 2 Global 0.25 Deg Lat/Lon Grid | 8 | 61
MLS/Aura Level 2 Ozone (O3) Mixing Ratio | 9 | 137
OMI/Aura Ozone (O3) DOAS Total Column 1-Orbit Level 2 Swath 13x24 Km | 10 | 54

Top results we should get according to LaRC
1. TES/Aura L2 Ozone (O3) Limb (TL2O3L)
2. TES/Aura L2 Ozone (O3) Limb (TL2O3LS)
3. TES/Aura L2 Ozone (O3) Nadir (TL2O3NS)
4. TES/Aura L2 Ozone (O3) Nadir (TL2O3N)
5. TES/Aura L3 Ozone (O3) Monthly (TL3O3M)
6. TES/Aura L3 Ozone (O3) Daily (TL3O3D)
7. TES/Aura L2 Supplemental Product (TL2SUPS)
8. NARSTO PAC2001 CONVAIR PM OZONE MET DATA
9. NARSTO PAC2001 CESSNA VOC PM OZONE MET DATA

Top 10 results we get from CMR on 02/13/15
Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=ozone

1. TOMS/Nimbus-7 Total Ozone Aerosol Index UV-Reflectivity UV-B Erythemal Irradiances Daily L3 Global 1x1.25 deg V008
2. TOMS/Earth-Probe Total Ozone Aerosol Index UV-Reflectivity UV-B Erythemal Irradiance Daily L3 Global 1x1.25 deg V008
3. TOMS/Meteor-3 Total Ozone UV-Reflectivity Daily L3 Global 1x1.25 deg V008
4. TOMS/Earth-Probe Ozone (O3) Total Column 1-Orbit L2 Swath 50x50 km V008
5. TOMS/Nimbus-7 Ozone (O3) Total Column 1-Orbit L2 Swath 50x50 km V008
6. TOMS/Earth Probe Total Column Ozone Daily L3 Global 1x1.25 deg Lat/Lon Grid V008
7. TOMS/Earth Probe Total Column Ozone Monthly L3 Global 1x1.25 deg Lat/Lon Grid V008
8. TOMS/EP Total Column Ozone Daily and Monthly Zonal Means V008
9. TOMS/Meteor-3 Total Column Ozone Daily L3 Global 1x1.25 deg Lat/Lon Grid V008
10. TOMS/Nimbus-7 Total Column Ozone Daily L3 Global 1x1.25 deg Lat/Lon Grid V008

Note: these are all ‘old’ datasets. If we add a temporal constraint:
Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=ozone&temporal=2010-01-01T00:00:00.000Z

1. OMI/Aura Ozone (O3) DOAS Total Column 1-Orbit L2 Swath 13x24 km V003
2. OMI/Aura Ozone (O3) Total Column 1-Orbit L2 Swath 13x24 km V003
3. OMI/Aura Ozone (O3) Total Column L2 Global 0.25 deg Lat/Lon Grid V003
4. OMI/Aura Ozone (O3) Total Column Daily L3 Global 0.25deg Lat/Lon Grid V003
5. OMI/Aura Ozone (O3) DOAS Total Column Daily L2 Global 0.25 deg Lat/Lon Grid V003
6. OMI/Aura TOMS-Like Ozone and Radiative Cloud Fraction Daily L3 Global 0.25x0.25 deg V003
7. OMI/Aura Ozone (O3) Profile 1-Orbit L2 Swath 13x48km V003
8. OMI/Aura TOMS-Like Ozone, Aerosol Index, Cloud Radiance Fraction Daily L3 Global 1.0x1.0 deg V003
9. OMI/Aura DOAS Total Column Ozone Zoomed 1-Orbit L2 Swath 13x12km V003
10. DISCOVER-AQ Ozonesonde_Data

Actual query used for initial study: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=ozone+GESDISC

1. LMD 5 DAY GRIDS from NOAA-12 V001
2. GLA 5 DAY GRIDS from NOAA-12 V001
3. GLA 5 DAY GRIDS from NOAA-9 V001
4. GLA 5 DAY GRIDS from NOAA-10 V001
5. GLA 5 DAY GRIDS from NOAA-11 V001
6. GLA 5 DAY GRIDS from TIROSN V001
7. GLA DAILY GRIDS from NOAA-12 V001
8. GLA DAILY GRIDS from NOAA-9 V001
9. GLA DAILY GRIDS from NOAA-10 V001
10. GLA DAILY GRIDS from NOAA-11 V001

LaRC-specific query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=ozone+larc
Case 2: Solar radiation search

Keyword search: 'insolation'

Source: Mary Jane Saddlington at LaRC

Top 10 results we should get according to LaRC

Top 10 results we get from CMR on 02/13/15

Query: [Query](http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=insolation)

Query: [Query](http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=insolation larc)

Zero hits

Case 3: Aerosol optical depth search

Keyword search: 'aerosol optical depth'

Source: Mary Jane Saddlington at LaRC

Top 10 results we should get according to LaRC

Top 10 results we get from CMR on 02/13/15

Query: [Query](http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=aerosol optical depth)

Query: [Query](http://cmr.earthdata.nasa.gov/search/collections.xml?keyword= aerosol optical depth larc)
Case 4: Backscatter search

Keyword search: 'backscatter'

Source: Mary Jane Saddington at LaRC

Top 9 results we should get according to LaRC

1. CAL_LID_L1-Standard-V4-00
2. CAL_LID_L1-ValStage1-V3-02
3. CAL_LID_L2_05kmAP-Val-Prov-V3-30
4. CAL_LID_L2_05kmCP-Val-Prov-V3-30
5. CAL_LID_L2_05kmCLay-Val-Prov-V3-30
6. CAL_LID_L2_05kmCLay-ValStage1-V3-30
7. CAL_LID_L2_05kmCLay-ValStage1-V3-30
8. CAL_LID_L2_05kmCLay-Val-Prov-V3-30
9. CAL_LID_L1-ValStage1-V3-30

Top 10 results we get from CMR on 02/13/15

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword= backscatter

1. DISCOVER-AQ_Aircraft_Remote_Sensing_Aerosol_Data
2. Shuttle SBUV (SSBUV) Solar Spectral Irradiance V008
3. Shuttle SBUV (SSBUV) Ozone Profile, Ozone Total Column, Aerosol Index, and UV-Reflectivity, Level-2 50x50 km V008
4. SBUV/Nimbus-7 Ozone Profile, Ozone Total Column 1-Orbit 200x200 km V008
5. BUV/Nimbus-04 Ozone (O3) Profile and Total Column Ozone Monthly L3 Global 5.0deg Lat Zones V1
6. SBUV/NOAA-14 Ozone (O3) Profile and Total Column Ozone Monthly L3 Global 5.0deg Lat Zones V1
7. SBUV/NOAA-17 Ozone (O3) Profile and Total Column Ozone Monthly L3 Global 5.0deg Lat Zones V1
8. SBUV/NOAA-09 Ozone (O3) Profile and Total Column Ozone Monthly L3 Global 5.0deg Lat Zones V1
9. SBUV/NOAA-11 Ozone (O3) Profile and Total Column Ozone Monthly L3 Global 5.0deg Lat Zones V1
10. SBUV/NOAA-16 Ozone (O3) Profile and Total Column Ozone Monthly L3 Global 5.0deg Lat Zones V1

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword= backscatter larc

Case 5: Sea ice concentration search

Keyword search: 'sea ice concentration'

Source: Lisa Booker at NSIDC

Top results we should get according to NSIDC

1. Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS Passive Microwave Data
2. Sea Ice Trends and Climatologies from SMMR and SSM/I-SSMIS
4. Bootstrap Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS
5. AMSR-E/Aqua Daily L3 12.5 km Tb, Sea Ice Conc., & Snow Depth Polar Grids V003

Top 10 results we get from CMR on 02/13/15

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=sea ice concentration

1. Nimbus-5 ESMR Polar Gridded Sea Ice Concentrations
2. DMSP SSM/I Daily and Monthly Polar Gridded Bootstrap Sea Ice Concentrations
3. Nimbus-7 SMMR Polar Gridded Radiances and Sea Ice Concentrations
4. DMSP-F8 SSM/I Pathfinder Global Level 2 Sea Ice Concentrations
6. Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS Passive Microwave Data
7. Bootstrap Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS
8. AMSR-E/Aqua Daily L3 25 km Tb and Sea Ice Concentration Polar Grids V002
9. AMSR-E/Aqua Daily L3 25 km Tb and Sea Ice Concentration Polar Grids V003
10. ISLSCP II Global Sea Ice Concentration

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=sea ice concentration nsidc

1. Nimbus-5 ESMR Polar Gridded Sea Ice Concentrations
2. DMSP SSM/I Daily and Monthly Polar Gridded Bootstrap Sea Ice Concentrations
3. Nimbus-7 SMMR Polar Gridded Radiances and Sea Ice Concentrations
4. DMSP-F8 SSM/I Pathfinder Global Level 2 Sea Ice Concentrations
6. AMSRIce03 Landsat-7 ETM+ Imagery
7. Coordinated Eastern Arctic Experiment (CEAREX) Data
8. Sea Ice Trends and Climatologies from SMMR and SSM/I-SSMIS
9. AARI 10-Day Arctic Ocean EASE-Grid Sea Ice Observations
10. Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS Passive Microwave Data

Case 6: Glacier search

Keyword search: 'glacier'
Source: Lisa Booker at NSIDC

Top results we should get according to NSIDC

1. GLIMS Glacier Database

Top 10 results we get from CMR on 02/13/15

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=glacier
1. GLIMS Glacier Database
2. MEaSUREs Greenland Ice Velocity: Selected Glacier Site Velocity Maps from InSAR
3. IceBridge WISE L2 Ice Thickness and Surface Elevation V001
4. IceBridge UAF Lidar Scanner L1B Geolocated Surface Elevation Triplets V001
5. Digital SAR Mosaic and Elevation Map of the Greenland Ice Sheet
6. Seasat and GEOSAT Altimetry for the Antarctic and Greenland Ice Sheets
7. GEOSAT Radar Altimeter DEM Atlas of Antarctica North of 72.1 degrees South
8. Antarctic 5-km Digital Elevation Model from ERS-1 Altimetry
10. Greenland 5 km DEM, Ice Thickness, and Bedrock Elevation Grids

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=glacier nsidc
1. Digital SAR Mosaic and Elevation Map of the Greenland Ice Sheet
2. Seasat and GEOSAT Altimetry for the Antarctic and Greenland Ice Sheets
3. GEOSAT Radar Altimeter DEM Atlas of Antarctica North of 72.1 degrees South
4. Antarctic 5-km Digital Elevation Model from ERS-1 Altimetry
5. Radarsat Antarctic Mapping Project Digital Elevation Model Version 2
6. Greenland 5 km DEM, Ice Thickness, and Bedrock Elevation Grids
7. Elevation Change of the Southern Greenland Ice Sheet from 1978-88
8. GLIMS Glacier Database
9. Antarctic 1 km Digital Elevation Model (DEM) from Combined ERS-1 Radar and ICESat Laser Satellite Altimetry
10. GLAS/ICESat 500 m Laser Altimetry Digital Elevation Model of Antarctica

Case 7: Snow cover search

Keyword search: 'snow cover'
Source: Lisa Booker at NSIDC

Top results we should get according to NSIDC

1. Northern Hemisphere EASE-Grid 2.0 Weekly Snow Cover and Sea Ice Extent
2. MODIS/Terra Snow Cover 5-Min L2 Swath 500m V005
3. MODIS/Terra Snow Cover 8-Day L3 Global 500m SIN Grid V005

Top 10 results we get from CMR on 02/13/15

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=snow cover
1. CLPX-Satellite: EO-1 Hyperion Surface Reflectance, Snow-Covered Area, and Grain Size
2. CLPX-Satellite: MODIS Radiance, Reflectances, Snow Cover and Related Grids
3. Global EASE-Grid 8-day Blended SSM/I and MODIS Snow Cover
4. Northern Hemisphere EASE-Grid 2.0 Weekly Snow Cover and Sea Ice Extent
5. MEaSUREs Northern Hemisphere Terrestrial Snow Cover Extent Daily 25km EASE-Grid 2.0
6. MEaSUREs Northern Hemisphere Terrestrial Snow Cover Extent Weekly 100km EASE-Grid 2.0
7. MODIS/Aqua Snow Cover 5-Min L2 Swath 500m V005
8. MODIS/Aqua Snow Cover Monthly L3 Global 0.05Deg CMG V005
9. MODIS/Terra Snow Cover 8-Day L3 Global 500m SIN Grid V005
Case 8: Land use search

Keyword search: 'land use'

Source: Doug Newman suggestion but should be fielded by Kelly Lemig and Matt Martens

Top 10 results we should get according to LDPAAC

Top 10 results we get from CMR on 02/13/15

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=land use

Case 9: Forest fires search

Keyword search: 'forest fires'

Source: Doug Newman suggestion but should be fielded by FIRMS

Top 9 results we should get according to FIRMS (me)

Top 10 results we get from CMR on 02/13/15

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=forest fires
3. RLC Forest Fire Locations in Eastern Russia, 1998-1999
4. LBA-ECO LC-02 Forest Flammability Data, Catuaba Experimental Farm, Acre, Brazil: 1998
5. RLC Forest Fire Images in Russia, 1998-1999
6. NPP Boreal Forest: Schefferville, Canada, 1974, R1
7. NACP Regional: Gridded 1-deg Observation Data and Biosphere and Inverse Model Outputs
10. LBA-ECO TG-10 Fire Emission Factors in Mato Grosso, Para, and Amazonas, Brazil: 2004

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=forest fires modis

1. MODIS/Terra Vegetation Cover Conversion 96-Day L3 Global 250m SIN Grid V004
2. NACP Regional: Gridded 1-deg Observation Data and Biosphere and Inverse Model Outputs
4. LBA-ECO LC-39 Modeled Carbon Flux from Deforestation, Mato Grosso, Brazil: 2000-2006
5. Global Fire Emissions Database, Version 3.1

Case 10: Cloud search

Keyword search: 'cloud'

Source: Mary Jane Saddington at LaRC

Top 10 results we should get according to LaRC

1. ISCCP D1 NAT
2. ISCCP D2
3. ISCCP D2 NAT
4. ISCCP DX
5. ISCCP DX NAT
6. CAL_LID_L2_333mCLay-ValStage1-V3-30
7. CAL_LID_L2_333mCLay-ValStage1-V3-03
8. CAL_LID_L2_333mCLay-ValStage1-V3-01
9. CAL_LID_L2_01kmCLay-ValStage1-V3-30
10. CAL_LID_L2_01kmCLay-ValStage1-V3-02

Top 10 results we get from CMR on 03/16/15

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=cloud

1. CAL_LID_L2_05kmCPro-Prov-V3-01
2. CER-NEWS_CCCM_Aqua-FM3-MODIS-CAL-CS_RelB1
3. CAL_LID_L2_333mCLay-ValStage1-V3-02
4. CAL_LID_L2_05kmCPro-Prov-V3-02
5. CAL_LID_L2_01kmCPro-Prov-V3-02
6. CAL_LID_L2_05kmCPro-Prov-V3-02
7. CAL_LID_L2_05kmCPro-Prov-V3-01
8. CAL_LID_L2_333mCLay-ValStage1-V3-01
9. CAL_LID_L2_01kmCLay-ValStage1-V3-01
10. CAL_LID_L2_PSCMask-Prov-V1-00

Case 11: Wind search

Keyword search: 'wind'

Source: Mary Jane Saddington at LaRC

Top 8 results we should get according to LaRC

1. MI2CMVPR
2. MI2CMVBR
3. MI3MCMVN
4. MI3QCMVN
5. MI3YCMVN
6. CAL_LID_L2_05kmCPro-Prov-V3-30
7. CAL_LID_L2_05kmCPro-Prov-V3-02
8. CAL_LID_L2_05kmCPro-Prov-V3-01

Top 10 results we get from CMR on 03/16/15

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=wind
1. QSCAT_L3_SFC_NORTHWARD_WIND_1DEG_1MO:1
2. QSCAT_L3_SFC_WIND_SPEED_1DEG_1MO:1
3. QSCAT_L3_SFC_EASTWARD_WIND_1DEG_1MO:1
4. QSCAT_LEVEL_2B_OWV_COMP_12:1
5. UARS Wind Imaging Interferometer (WINDII) Level 3AL V001
6. UARS Wind Imaging Interferometer (WINDII) Level 3AT V001
7. NARSTO_EPA_SS_ST_LOUIS_AIR_CHEM_PM_MET_DATA
8. OSCAR_L4_OC_1deg:1
9. OSCAR_L4_OC_third-deg:1
10. LBA-ECO CD-03 Mesoscale Meteorological Data, Santarem Region, Para, Brazil: 1998-2006

Query: http://cmr.earthdata.nasa.gov/search/collections.xml?keyword=wind larc

1. NARSTO_EPA_SS_ST_LOUIS_AIR_CHEM_PM_MET_DATA